

## New taxa and data of western Palaearctic *Nephrotoma* (Diptera: Tipulidae)

by

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ABSTRACT. — Two new taxa of *Nephrotoma* are described and discussed: *N. cretensis* from Crete and *N. guestfalica hartigiana* from Sardinia. *N. staryi* is proposed as a new name for the preoccupied *N. schaeuffelei* Alexander, 1978 nec Mannheims, 1964. In addition, species new to Ireland, Portugal, Morocco, and Turkey are mentioned.

### INTRODUCTION

Oosterbroek (1978-1980) revised the western Palaearctic species of *Nephrotoma*. Since then, interesting new material could be studied, as well as type-material not available for the revision. The material is preserved in the Zoölogisch Museum, Amsterdam (ZMA), unless stated otherwise.

#### *Nephrotoma cretensis* spec. nov.

Type-material. Holotype: ♂, Kreta, 500 m, Kotsifiana, 20.V.1977, 23° 45' E - 35° 24' N, Dr. H. Malicky. Paratypes: 26 ♂, 16 ♀, labelled as the holotype; 2 ♀, Kreta, 350 m, Moni Venui, 23.V.1977, 24° 35' E-35° 17' N, Dr. H. Malicky; 1 ♂, 1 ♀, Kreta, 23.V.1977, Kreuzung Volionos - Moni Venui, 130 m, 24° 34' E - 35° 17' N, Lichtfang, Dr. H. Malicky; 1 ♂, Kreta, 280 m, Fassastal W Chliaro, 23° 53' E - 35° 24' N, 18-20.V.1977, Dr. H. Malicky; 1 ♂, 1 ♀, Kreta, 20.V.1977, Kakopetros, 440 m, 23° 45' E - 35° 24' N, Dr. H. Malicky; 1 ♂, 1 ♀, Crête, Kares, 12.V.1977, Ruedi leg.; 1 ♀, Crête, Spili, 14.V.1979, Ruedi leg. (specimens collected by Malicky preserved in alcohol).

Description. Size and colouration as in *N. beckeri* (see Oosterbroek, 1978), but differing in the following characters. Scutellum entirely dark brown (in *beckeri* light brown with a small, dark brown spot on anterior part). Hind margins of female tergites broadly brown (twice as broad as in *beckeri*). Extension of male tergite nine as in fig. 3A (*beckeri* 3B). Outer dististyle as long as in *beckeri* but twice as narrow. Posterior crest of inner dististyle apically rounded (tipped in *beckeri*). Compressor apodeme of the aedeagus simple and distinctly bilobate (in *beckeri* the apodeme is more complex, cf. Oosterbroek, 1978, fig. 43). Intromittent organ shorter than in *beckeri* (*cretensis*: 7.57-8.95 mm, *beckeri*: 12.54-14.39; position of break-up in *cretensis* 55-61%, in *beckeri* 44-48%, 6 males measured in *cretensis*, 5 in *beckeri*). Lateral appendages of adminiculum (fig. 1) directed posteriorly with several minor ridges on dorsal part (appendage triangular in *beckeri*). Dorsal margin of female sternite 8 (fig. 2A) not evenly curved as in *beckeri* (2B). Hypoalvae shortened as if the apical tip is broken off (fig. 2A) but less reduced than in *beckeri* (2B).

Discussion. *N. cretensis* is considered the sisterspecies of *beckeri*. Several synapomorphous characters can be listed for this species pair, e.g.: shape of central part of adminiculum, shape of medial appendage between male sternites 8 and 9, shape of inner dististyle. The species pair belongs to the *flavescens* subgroup (phylogeny in Oosterbroek, 1980, cladogram 2B). The female hypoalvae of *cretensis* are similar to the shortened, apically serrate hypoalvae of most members of this subgroup. Comparison of *beckeri* and *cretensis* reveals that the hypoalvae of *beckeri* are reduced further than in *cretensis* and do not represent the intermediate state between normal and apically serrate hypoalvae, as originally mentioned by Oosterbroek, 1980 (cladogram 2B, character 16). Hence, the phylogenetic position of the *beckeri-cretensis* lineage must be reconsidered. Both species are in agreement with the characters 13-15 and 17-19, listed by Oosterbroek 1980 for the phylogeny of the *flavescens* subgroup. This means that three

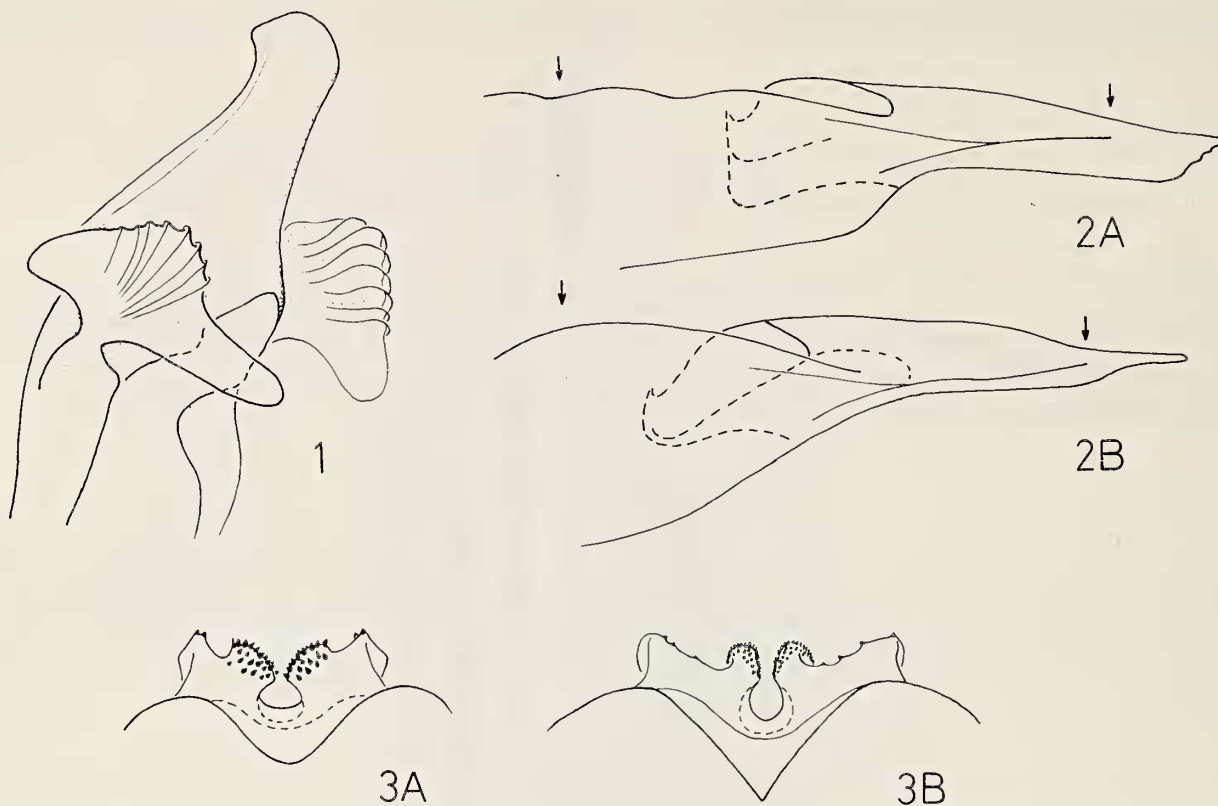


Fig. 1: Adminiculum of *N. cretensis*, lateroposterior view. 2: Female sternite 8 and hypovalva, outside view, A: *N. cretensis*, B: *N. beckeri*. 3: Extension of male tergite 9, dorsal view, A: *N. cretensis*, B: *N. beckeri*.

positions are open for this lineage, viz. (1) the original position, (2) the sistergroup position of the *guestfalica-quadrifaria* pair, and (3) the sistergroup position of the *flavescens-lempkei* species group.

*Nephrotoma guestfalica hartigiana* subsp. nov.

Type-material. Holotype: ♂, Sardegna Centrale, parte centrale, Alai R. Mannu, 9.V.1977, coll. Hartig. Paratypes: 1 ♂, 1 ♀, Sardegna Merid, Musei, 120 m, 24.V.1974, coll. F. Hartig; 1 ♂, Sardinia, Domusnovas Tiny, 7 VI.1974, coll. F. Hartig. Types in ZMA.

Description. Size and colouration as in the nominal subspecies (see Oosterbroek, 1978), differing in the following characters. 1) Tibia brown, distinctly darker than femur (in *g. guestfalica* both light brown). 2) Medial incision of posterior extension of male tergite nine (fig. 5A) less excavated than in *g. guestfalica* (5B). 3) Posterior crest of inner dististyle short and rounded (fig. 6B). 4) Outer dististyle (fig. 4A) basally less broad than in *g. guestfalica* (4B).

Discussion. In the subspecies *g. surcoufi* (Pierre) from North West Africa the above listed characters are as follows. 1) As in *g. guestfalica*. 2) As in *g. hartigiana*. 3) Crest entirely reduced (fig. 6C). 4) Intermediate between *g. guestfalica* en *g. hartigiana*. The shape of the posterior crest of the inner dististyle (fig. 6) suggests a sistergroup relation between *g. hartigiana* and *g. surcoufi*. However, it is questionable whether the different states of this character can be interpreted as a transformation series. Reduction of the crest is found in several taxa of the *flavescens* subgroup to which *guestfalica* belongs, and is known to occur frequently in tipulids, especially within isolated populations (e.g. in *T. (L.) sardolivida* Mannheims & Theowald from Sardinia, Mannheims & Theowald, 1951-1980, fig. 259; in *T. (S.) lundbladi* Mannheims from Madeira, o.c., fig. 312).

*Nephrotoma staryi* nom. nov.

The name *schaeuffelei* is used by Mannheims, 1964, for a *Nephrotoma* species from Iran and

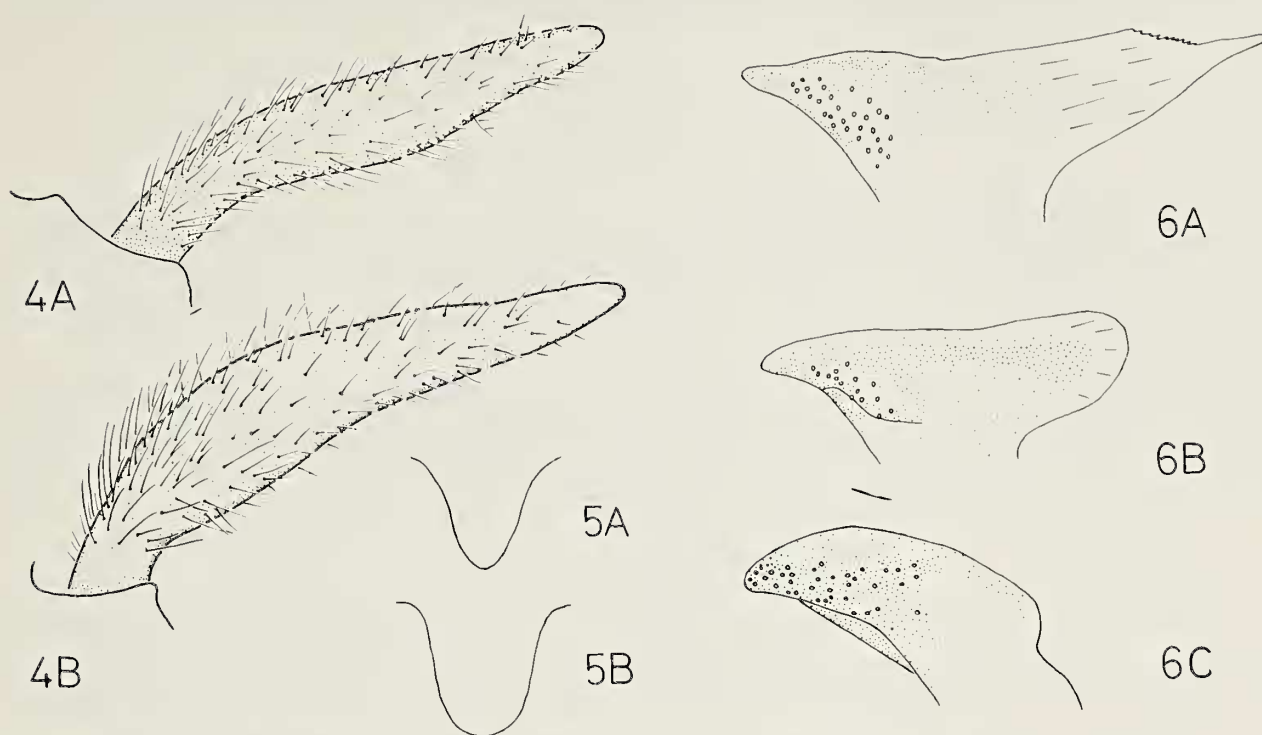


Fig. 4: Left outer dististyle, outside view, A: *N.g. hartigiana*, B: *N.g. guestfalica*. 5: Medial incision of extension of male tergite 9, dorsal view, A: *N.g. hartigiana*, B: *N.g. guestfalica*. 6: Upper half of left inner dististyle, outside view, A: *N.g. guestfalica*, B: *N.g. hartigiana*, C: *N.g. surcoufi*.

by Alexander, 1978, for a *Nephrotoma* species from Ethiopia. As a new name for the latter I would like to propose *staryi*, in honour of Dr. J. Stary, who drew our attention to this homonymy.

#### *Nephrotoma croceiventris* (Strobl, 1909)

*N. croceiventris* was taken out of synonymy with *pratensis* by Oosterbroek, 1979a, based on the original description of *croceiventris*. Through the kindness of Prof. Dr. G. Morge, Eberswalde, the female holotype of *croceiventris*, preserved at Admont, Austria, could be studied. It is labelled as follows: Provincia de Madrid. J. Lauffer/rectangular green label/ Holotypus ♀ des Mannhs 49./ Pales croceiventris Strobl Mannheims det. 1949/ P. cast. v. croceiventris m. ♀. Spanien (final label on separate pin).

Examination of the holotype confirmed that *croceiventris* and *pratensis* are two different species and that *croceiventris* Strobl is identical with *croceiventris croceiventris* Strobl sensu Oosterbroek, 1979a.

Records of species, new to certain countries or regions, are as follows:

#### Ireland

*N. submaculosa* Edwards: Corraun district, Co. Mayo.

*N. q. quadrifaria* (Meigen): Westport, Co. Clare.

*N. c. crocata* (Linnaeus): Maryborough (= Port Laoise), Queen's County (= Co. Leix); Powerscourt and Blessington, Co. Wicklow. The material of these three species is preserved in the Natural History Museum, Dublin.

#### Portugal

*N. flavipalpis* (Meigen): Monchique, M. Picota.

#### Morocco

*N. submaculosa* Edwards: Azrou, Middle Atlas; Ketama and Dardara, Rif Mts. The material of Azrou and Ketama is preserved in the British Museum (Natural History).

*N. sullingtonensis* Edwards: Bab Berret, Rif Mts.

Italy

*N. submaculosa* Edwards: Aritzo and Belvi (new for Sardinia).

*N. cornicina* (Linnaeus): Mti Peloritani (new for Sicily).

Turkey

*N. aculeata* (Loew): Macka; Amasya; near Van.

*N. theowaldi* Oosterbroek: several localities along the western slopes of the Taurus mountains in southern Turkey. The species was described from western Turkey.

*N. nasuta* Oosterbroek: Bursa, Uludag (NW Turkey); Aksehir (C Turkey). The species was described from eastern Turkey, near Van Gölü.

*N. beckeri* (Mannheims): Apart from Cyprus, this species was known from the Turkish mainland after the holotype male only, collected by Holtz in 1895 in the Taurus Cilic. It was collected at Namrun, Taurus Cilic, again in 1979 by Holzshuh and Ressler.

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#### REFERENCES

- Alexander, C. P., 1978. New or little-known African Tipulidae in the Staatlichen Museum für Naturkunde in Stuttgart. — *Stuttg. Beitr. Naturk.* (A) 304: 1-9.
- Mannheims, B., 1964. Tipuliden aus Iran (Dipt.). Ergebnisse der entomologischen Reisen Willi Richter, Stuttgart, im Iran 1951-1956 nr. 44. — *Stuttg. Beitr. Naturk.* (A) 126: 1-7.
- Mannheims, B. & Br. Theowald, 1951-1980. Tipulidae. A: Westpalaearktische Arten. — *Fliegen pal. Reg.* 3, 5: 1-538.
- Oosterbroek, P., 1978-1980. The western Palaearctic species of *Nephrotoma* Meigen, 1803 (Diptera, Tipulidae), Part 1 (1978). — *Beaufortia* 27: 1-137. Part 2 (1979a). — *Beaufortia* 28: 57-111. Part 3 (1979b). — *Beaufortia* 28: 157-203. Part 4, including a key to species (1979c). — *Beaufortia* 29: 129-197. Part 5, Phylogeny and Biogeography (1980). — *Beaufortia* 29: 311-394.

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PROVISIONAL ATLAS OF THE INVERTEBRATES OF EUROPE, MAPS 1-27, J. Heath & J. Leclereq, eds, 1981. Institute of Terrestrial Ecology, Cambridge & Faculté des Sciences Agronomiques, Gembloux, Belgique. ISBN 0-904282-58-9. Prijs niet vermeld.

De eerste 27 kaarten waarop de gegevens van alle Europese landen verwerkt zijn, bevatten die van 12 Lepidoptera, 12 Hymenoptera en 4 Nematoden. Duidelijk is wel, dat we nog ver af zijn van kaarten zonder de aanduiding „provisional”. Gegevens uit de Oosteuropese landen zijn er nauwelijks (Bulgarije maakt een opvallende uitzondering), maar zelfs voor Noord-Duitsland blijken vooral verschillende vlinders nog slecht in kaart gebracht te zijn. Een goede indruk van de verspreiding in Europa geven deze kaarten dan ook nog niet.

Hier al vast drie correcties op de kaarten van de Lepidoptera voor zover het de Nederlandse fauna betreft. Bij *Lasiommata maera* (Linnaeus) (kaart 4) ontbreken de vangsten in Noord-Brabant in de vorige eeuw. Bij *Melitaea cinxia* (Linnaeus) (kaart 7) is aangegeven dat ze „vanaf 1950” in Noord-Nederland is aangetroffen. Dit moet zijn „voor 1950” (omstreeks 1850). Bij *Eriogaster catax* (Linnaeus) (kaart 11) is de enige Nederlandse vangst eveneens aangegeven als „vanaf 1950”, terwijl ook deze omstreeks een eeuw eerder plaats vond. — B. J. Lempke.

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